

CLEAN SET OF CLAIMS

Serial No. 09/575,551

*Sub C17*  
*B*  
56. A method for processing a semiconductor wafer, data disk, semiconductor substrate and similar article requiring very low contaminant levels comprising the steps of:  
moving a sealed container, holding at least one article in a horizontal orientation, [through]  
to an interface port of a processing system;  
unsealing the container by removing a panel of the container, to provide access to the article in the container;  
engaging the article with an engagement head;  
pivoting the engagement head to move the article from a horizontal orientation into a vertical orientation;  
releasing the article from the engagement head;  
placing the article on a shelf with the article in a vertical orientation;  
lifting the article off of the shelf with a transfer robot;  
carrying the article on the robot to a process chamber;  
opening the process chamber;  
moving the article into the process chamber;  
closing the process chamber;  
processing the article in the process chamber.

B<sub>1</sub> 57. The method of claim 56 where the interface port is part of a processing system within an enclosure.

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B<sub>2</sub> 62. The method of claim 56 wherein removing the panel of the container places the interior of the container in fluid communication with the workspace within the enclosure.

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64. The method of claim 56 wherein the engagement head is pivoted upwardly to move the article from the horizontal to vertical orientation.

B<sub>3</sub>  
SUBC27 65. A method for processing a semiconductor wafer, data disk, semiconductor substrate and similar articles requiring very low contaminant levels, comprising the steps of:

moving a sealed container holding at least one article in a horizontal orientation, to an interface port of a processing system;

unsealing the container, to provide access to the article in the container;

engaging the article with an engagement head by moving the engagement head in a first direction;

pivoting the engagement head, to move the article from a horizontal orientation into a vertical orientation;

releasing the article from the engagement head and placing the article on a shelf with  
the article in a vertical orientation;

lifting the article off of the shelf with a transfer robot;

carrying the article on the transfer robot to a process chamber by moving the transfer  
robot in a second direction, perpendicular to the first direction;

opening the process chamber;

placing the article into the process chamber;

closing the process chamber; and

processing the article in the process chamber.